



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,174	03/24/2004	Yoshihiro Nakata	011293A	4205

23850 7590 10/28/2005

ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP  
1725 K STREET, NW  
SUITE 1000  
WASHINGTON, DC 20006

EXAMINER

VO, HAI

ART UNIT	PAPER NUMBER
----------	--------------

1771

DATE MAILED: 10/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/807,174

Applicant(s)

NAKATA ET AL.

Examiner

Hai Vo

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 09/983,951.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0126, 0324</u> | 6) <input type="checkbox"/> Other: _____  |

***Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-3, and 5-7 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 of U.S. Patent No. US 6,613,834. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-6 of U.S. Patent No. US 6,613,834 fully encompass the presently claimed subject matter in addition to a relative dielectric constant limitation.
3. Claims 1-7 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 of U.S. Patent No. 6,780,498. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-13 of U.S. Patent No. 6,780,498 fully encompass the presently claimed subject matter with additional limitations of porosity and relative dielectric constant.

***Claim Rejections - 35 USC § 102***

Art Unit: 1771

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e)...

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Yamamura et al (US 4,778,722). Yamamura teaches a composition comprising a mixture of polycarboxilane, polymetalsiloxane and solvent (column 3, lines 20-30, and 44-45; column 4, lines 1-10). Accordingly, Yamamura anticipates the claimed subject matter.
6. Claims 1, 2, 5 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Rutherford et al (US 6,318,124). Rutherford teaches a coating composition comprising a mixture of a polycarboxilane, a siloxane resin and solvent (column 10, lines 30-36). Rutherford teaches the polycarboxilane having a structure represented by formula  $-\text{[Si(R1)(R2)H]}_x-$  wherein R1 is an alkylene; R2 is H and x is from 10 to 100,000 (column 12, line 67 to column 13, lines 1-10). The siloxane resin has a structure wherein the mole percent of carbon is in the range of about 15 mole percent to 25 mole percent within the claimed range (column 11, lines 50-51). Rutherford teaches the siloxane has a structure represented by formula  $[\text{H-SiO}_{1.5}]_x[\text{R-SiO}_{1.5}]_y[\text{SiO}_{1.5}]_z$  (formula

Art Unit: 1771

- 4). When  $x = 1$ ,  $y = 1$ ,  $z = 6$  and R is CH<sub>3</sub>, the hydrogen concentration is about 15 atom% based on the total atoms of the siloxane resin. Accordingly, Rutherford anticipates the claimed subject matter.
7. Claims 1-3, and 5-7 are rejected under 35 U.S.C. 102(a) as being anticipated by JP 2001-127152. JP'152 teaches a composition comprising a mixture of polycarboxilane, siloxane resin and solvent (claim 1). The composition contains 5 to 80 parts by weight of polycarbosilane within the claimed range [0029]. Since JP'152 uses the siloxane resin with the same formula as recited by the claims, it is not seen that the carbon concentration and hydrogen concentration could be outside the claimed range. Accordingly, JP'152 anticipates the claimed subject matter.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rutherford et al (US 6,318,124) as applied to claim 1 above, further in view of JP 64-009231. Rutherford does not specifically disclose how the siloxane resin is formed. JP'231, however, teaches siloxane polymer being formed from heat treatment of a mixture containing tetralkoxysilane and trialkoxysilane and alcohol is released from the mixture to form a siloxane

Art Unit: 1771

polymer. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the method as taught by JP'231 to produce a siloxane polymer because such is known in the art and JP'231 provides necessary details to practice the invention of Rutherford.

JP'231 does not specifically disclose the molar ratio of tetraalkoxysilane and trialkoxysilane as well as the amount of alcohol removed from the mixture. However, such a variable would have been recognized by one skilled in the art as dependent upon the intended use of the product. As such, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the molar ratio in the range instantly claimed motivated by the desire to form a siloxane polymer within a short time, thereby giving an insulation film with improved heat resistance, adhesion and cracking resistance since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rutherford et al (US 6,318,124). Rutherford does not specifically disclose the weight ratio of polycarbosilane to siloxane resin in the coating composition. However, However, such a variable would have been recognized by one skilled in the art to achieve enhanced mechanical strength and improvements in film surface hydrophobicity. As such, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time

Art Unit: 1771

the invention was made to employ the molar ratio in the range instantly claimed motivated by the desire to achieve enhanced mechanical strength and improvements in film surface hydrophobicity since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-127152 as applied to claim 1 above, further in view of JP 64-009231. JP'152 does not specifically disclose how the siloxane resin is formed. JP'231, however, teaches siloxane polymer being formed from heat treatment of a mixture containing tetralkoxysilane and trialkoxysilane and alcohol is released from the mixture to form a siloxane polymer. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the method as taught by JP'231 to produce a siloxane polymer because such is known in the art and JP'231 provides necessary details to practice the invention of JP'152.

JP'231 does not specifically disclose the molar ratio of tetralkoxysilane and trialkoxysilane as well as the amount of alcohol removed from the mixture. However, such a variable would have been recognized by one skilled in the art as dependent upon the intended use of the product. As such, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the molar ratio in the range instantly claimed motivated by the desire to form a

Art Unit: 1771

siloxane polymer within a short time, thereby giving an insulation film with improved heat resistance, adhesion and cracking resistance since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

### ***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on M,T,Th, F, 7:00-4:30 and on alternating Wednesdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Hai Vo*

**HAI VO  
PRIMARY EXAMINER**